



**Biological Assessment
of the Effects of the
Willamette River Basin Flood Control Project
on Listed Species
Under the Endangered Species Act**

FINAL

Submitted by:

U.S. Army Corps of Engineers
Portland District

Submitted to:

**National Marine Fisheries Service
U.S. Fish and Wildlife Service**

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EXECUTIVE SUMMARY

This Biological Assessment addresses the likely effects of the continued operation of the Willamette River Basin Project ("Willamette Project") on species that have been listed as threatened or endangered, are candidates for listing, or are proposed for listing, under the federal Endangered Species Act (ESA). The U.S. Army Corps of Engineers (USACE) is the lead action agency for purposes of this consultation.

The action under consultation involves the continued operation and maintenance of the thirteen federal dam and reservoir projects that have been constructed for flood control and other authorized purposes in the Willamette River basin, activities associated with bank protection works, and other actions directly or indirectly related to the project. The thirteen projects are: Detroit/Big Cliff, Green Peter, Foster, Blue River, Cougar, Fall Creek, Hills Creek, Lookout Point/Dexter, Dorena, Cottage Grove, and Fern Ridge. Bank protection works administered by the USACE as part of the Willamette Project extend upstream from RM 59.6 of the mainstem Willamette River, near Dayton, Oregon.

This document has been prepared in order to consult simultaneously with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS), who are responsible for managing the various species of concern as follows:

The NMFS has jurisdiction over the following anadromous fish species that may be affected by the Willamette Project: the Upper Willamette River chinook salmon Evolutionarily Significant Unit (ESU), Lower Columbia River chinook salmon ESU, Columbia River chum salmon ESU, Upper Willamette River steelhead trout ESU, Lower Columbia River steelhead trout ESU, and the Lower Columbia River/Southwest Washington coho salmon ESU.

The USFWS has jurisdiction over other fish, plant, and terrestrial animal species that may be affected by the Willamette Project. The fish species involved are: the Columbia River bull trout Distinct Population Segment (DPS), Oregon chub, Southwest Washington/Columbia River coastal cutthroat trout ESU, and the Upper Willamette cutthroat trout ESU. Plant species involved are: the golden paintbrush, howellia, Nelson's checker-mallow, Willamette daisy, and Kincaid's lupine. Terrestrial animal species include: the gray wolf, Columbian white-tailed deer, marbled murrelet, Aleutian Canada goose, bald eagle, northern spotted owl, Canada lynx, and Fender's blue butterfly.

This Biological Assessment reviews the current operations of the Willamette Project and addresses effects to listed fish in terms of flow, water quality, migration barriers, habitat loss or changes, fish passage, geomorphology, predation and competition, exotic species, recreation, and hatchery activities. Each of these features influences the listed species through individual project effects, and through effects of the system as a whole. Effects are evaluated upstream and downstream of Willamette Falls, which influences the nature and degree of effect that may be expected because of its location relative to the projects and the influence of the Columbia River. Effects to wildlife and plants are evaluated with respect to their distribution, habitat needs, and habitat availability.

A Biological Opinion has already been completed on the effects of the Willamette Project on Oregon chub with respect to dam and reservoir operations. This Biological Assessment supplements that consultation by including consideration of the effects of bank protection works on Oregon chub habitat.

The effects of hatchery activities are identified here, but are not evaluated thoroughly because they will be addressed more explicitly under a separate consultation.

The analysis of effects concludes that the continued operation of the Willamette Basin Project is Likely to Adversely Affect:

Upper Willamette River chinook salmon ESU

Upper Willamette River steelhead trout ESU

Columbia River bull trout DPS

Oregon chub

Upper Willamette cutthroat trout ESU (not listed currently, but under consideration).

Howellia aquatilis

The analysis of effects concludes that the continued operation of the Willamette Basin Project is Not Likely to Adversely Affect, or would have No Effect on other listed candidate, and proposed threatened and endangered species, including for fish: chinook salmon, steelhead trout, chum salmon, coho salmon, and cutthroat trout ESU's occurring below Willamette Falls; and for wildlife and plants: gray wolf, Columbian white-tailed deer, marbled murrelet, Aleutian Canada goose, bald eagle, northern spotted owl, golden paintbrush, Bradshaw's desert parsley, Nelson's checker-mallow, Willamette daisy, Kincaid's lupine, Fender's blue butterfly, and Canada lynx.